

Having thus described the various embodiments of the invention, the invention is now claimed to be

1. A method for classification of an input image in picture or graphic classes, comprising the following steps:

a) extracting one or more one-dimensional color discreteness features from the input image;

b) conditioning each extracted feature to prepare the feature for subsequent processing;

c) processing each conditioned feature using an algorithm associated with the feature;

d) comparing the result of each feature algorithm to one or more previously selected thresholds, and

e) if, according to previously determined rules, any comparison is determinative of the class of the input image, classifying the input image in either the picture or graphic classes according to the previously determined rules, otherwise indicating the result is indeterminate.

2. The method as set forth in claim 1, wherein step a) includes the following steps

f) transforming the input image to a color space,

g) processing the transformed image using a low-pass filter; and

h) computing one or more one-dimensional histograms from the filtered image, each histogram representing a different color channel of the color space.

3. The method as set forth in claim 2, wherein step b) includes the following step

i) normalizing the one or more one-dimensional histograms to condition the histogram(s) for subsequent processing.

4. The method as set forth in claim 3, wherein step b) further includes the following step:

j) processing the one or more one-dimensional histograms using a low-pass filter to condition the histogram(s) for subsequent processing.

5. The method as set forth in claim 3, wherein step b) further includes the following step:

j) processing each bin of the one or more one-dimensional histograms where the bin count exceeds a previously selected threshold using a previously selected mathematical function to condition the histogram(s) for subsequent processing.

6. The method as set forth in claim 2, wherein the color space is a CIELUV color space.

7. The method as set forth in claim 6, wherein the one or more one-dimensional histograms are selected from the group consisting of an L channel histogram, a U channel histogram, and a V channel histogram.

8. A method for classification of an input image in picture or graphic classes, comprising the following steps

a) extracting one or more two-dimensional color discreteness features from the input image;

b) conditioning each extracted feature to prepare the feature for subsequent processing;

c) processing each conditioned feature using an algorithm associated with the feature;

d) comparing the result of each feature algorithm to one or more previously selected thresholds, and

e) if, according to previously determined rules, any comparison is determinative of the class of the input image, classifying the input image in either the

picture or graphic classes according to the previously determined rules, otherwise indicating the result is indeterminate.

9. The method as set forth in claim 8, wherein step a) includes the following steps:

- f) transforming the input image to a color space;
- g) processing the transformed image using a low-pass filter, and
- h) computing one or more two-dimensional histograms from the filtered image, each dimension of the histogram representing a different color channel of the color space.

10. The method as set forth in claim 9, wherein step b) includes the following step:

- i) normalizing the one or more two-dimensional histograms to condition the histogram(s) for subsequent processing.

11. The method as set forth in claim 10, wherein step b) further includes the following step:

- j) processing the one or more two-dimensional histograms using a low-pass filter to condition the histogram(s) for subsequent processing.

12. The method as set forth in claim 10, wherein step b) further includes the following step

- j) processing each bin of the one or more two-dimensional histograms where the bin count exceeds a previously selected threshold using a previously selected mathematical function to condition the histogram(s) for subsequent processing.

13. The method as set forth in claim 9, wherein the color space is a CIELUV color space

14. The method as set forth in claim 13, wherein the one or more two-dimensional histograms are selected from the group consisting of an LU histogram, an LV histogram, and a UV histogram.

15. A method for classification of an input image in picture or graphic classes, comprising the following steps:

a) extracting a three-dimensional color discreteness feature from the input image;

b) conditioning the extracted feature to prepare the feature for subsequent processing,

c) processing the conditioned feature using an algorithm associated with the feature;

d) comparing the result of the feature algorithm to one or more previously selected thresholds; and

e) if, according to previously determined rules, any comparison is determinative of the class of the input image, classifying the input image in either the picture or graphic classes according to the previously determined rules, otherwise indicating the result is indeterminate

16. The method as set forth in claim 15, wherein step a) includes the following steps:

f) transforming the input image to a color space;

g) processing the transformed image using a low-pass filter, and

h) computing a three-dimensional histogram from the filtered image, each dimension of the histogram representing a different color channel of the color space.

17. The method as set forth in claim 16, wherein step b) includes the following step:

i) normalizing the three-dimensional histogram to condition the histogram for subsequent processing.

18. The method as set forth in claim 17, wherein step b) further includes the following step:

j) processing the three-dimensional histogram using a low-pass filter to condition the histogram for subsequent processing

19. The method as set forth in claim 17, wherein step b) further includes the following step:

j) processing each bin of the three-dimensional histogram where the bin count exceeds a previously selected threshold using a previously selected mathematical function to condition the histogram for subsequent processing

20. The method as set forth in claim 16, wherein the color space is a CIELUV color space.

21. The method as set forth in claim 20, wherein the three-dimensional histogram is an LUV histogram

22. A method for classification of an input image in picture or graphic classes using a combination classifier, comprising the following steps:

a) performing a picture/graphics classifier on an input image using one or more one-dimensional color discreteness features;

b) if the result of the picture/graphics classifier using one-dimensional color discreteness features is indeterminate, performing a picture/graphics classifier on the input image using one or more two-dimensional color discreteness features, and,

c) if the result of the picture/graphics classifier using two-dimensional color discreteness features is indeterminate, performing a picture/graphics classifier on the input image using a three-dimensional color discreteness feature.

23. A method for classification of an input image in picture or graphic classes using a combination classifier, comprising the following steps

a) performing a picture/graphics classifier on an input image using one or more one-dimensional color discreteness features;

b) performing a picture/graphics classifier on the input image using one or more two-dimensional color discreteness features;

c) performing a picture/graphics classifier on the input image using a three-dimensional color discreteness feature; and,

d) comparing the results of each picture/graphics classifier performed and, if one or more classifiers is determinative of the class of the input image, classifying the input image in either the picture or graphic classes according to previously determined rules, otherwise indicating the result is indeterminate